

WHAT IS CLAIMED IS:

- 1 1. A method of inhibiting the generation of active thrombin on the
2 surface of a cell of a mammal, the method comprising producing an ER resident
3 chaperone protein in said cell.
- 1 2. The method of claim 1, wherein said cell is an endothelial cell.
- 1 3. The method of claim 1, wherein said cell is a smooth muscle cell.
- 1 4. The method of claim 1, wherein said cell is a macrophage.
- 1 5. The method of claim 1, wherein said cell is a monocyte.
- 1 6. The method of claim 1, wherein said ER resident chaperone protein
2 is GRP78/BiP.
- 1 7. The method of claim 1, wherein said ER resident chaperone protein
2 is selected from the group consisting of GRP94, GRP72, Calreticulin, Calnexin, Protein
3 disulfide isomerase, cis/trans-Prolyl isomerase, and HSP47.
- 1 8. The method of claim 1, wherein the production of said ER resident
2 chaperone protein within said cell results in a decrease in the level of tissue factor
3 procoagulant activity on the surface of said cell.
- 1 9. The method of claim 1, wherein said cell is present within said
2 mammal.
- 1 10. The method of claim 9, wherein said cell is present within an
2 atherosclerotic plaque in said mammal.
- 1 11. The method of claim 1, wherein a polynucleotide encoding said ER
2 resident chaperone protein, operably linked to a promoter, is introduced into said cell,
3 whereby said ER resident chaperone protein is produced.
- 1 12. The method of claim 11, wherein said polynucleotide is introduced
2 into said cell using a viral vector.

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1 13. The method of claim 12, wherein said viral vector is an adenoviral
2 vector.

1 14. The method of claim 11, wherein said polynucleotide is introduced
2 into said cell using a nonviral vector.

1 15. The method of claim 14, wherein said nonviral vector is introduced
2 into said cell as naked DNA or using liposome-mediated transfection.

1 16. The method of claim 1, wherein said ER resident chaperone protein
2 is produced by administering to said cell a compound that induces the expression or
3 activation of an endogenous ER resident chaperone protein.

1 17. The method of claim 16, wherein said compound is a cytokine.

1 18. A method of preventing or treating a thrombotic disease or
2 condition in a mammal, the method comprising producing an ER resident chaperone
3 protein within a population of cells of said mammal, whereby the generation of active
4 thrombin on the surface of said population of cells is inhibited.

1 19. The method of claim 18, wherein said population of cells
2 comprises endothelial cells.

1 20. The method of claim 18, wherein said population of cells
2 comprises smooth muscle cells.

1 21. The method of claim 18, wherein said population of cells
2 comprises macrophages.

1 22. The method of claim 18, wherein said population of cells
2 comprises monocytes.

1 23. The method of claim 18, wherein said ER resident chaperone
2 protein is GRP78/BiP.

1 24. The method of claim 18, wherein said ER resident chaperone
2 protein is selected from the group consisting of GRP94, GRP72, Calreticulin, Calnexin,
3 Protein disulfide isomerase, cis/trans-Prolyl isomerase, and HSP47.

1 25. The method of claim 18, wherein the production of said ER
2 resident chaperone protein within said population of cells results in a decrease in the level
3 of tissue factor procoagulant activity on the surface of said population of cells.

1 26. The method of claim 18, wherein said population of cells is present
2 within an atherosclerotic plaque in said mammal.

1 27. The method of claim 18, wherein said mammal has had a
2 myocardial infarction and is undergoing angioplasty or stenting.

1 28. The method of claim 27, wherein said mammal is undergoing
2 stenting, and said population of cells is present on the surface of a stent within said
3 mammal.

1 29. The method of claim 18, wherein said mammal is undergoing
2 cranial radiation.

1 30. The method of claim 18, wherein said mammal is undergoing
2 vascular surgery.

1 31. The method of claim 18, wherein a polynucleotide encoding said
2 ER resident chaperone protein, operably linked to a promoter, is introduced into said
3 population of cells, whereby said ER resident chaperone protein is produced.

1 32. The method of claim 31, wherein said polynucleotide is introduced
2 into said cell using a viral vector.

1 33. The method of claim 32, wherein said viral vector is an adenoviral
2 vector.

1 34. The method of claim 31, wherein said polynucleotide is introduced
2 into said cell using a nonviral vector.

1 35. The method of claim 34, wherein said nonviral vector is introduced
2 into said cell as naked DNA or using liposome-mediated transfection.

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1 36. The method of claim 18, wherein said ER resident chaperone
2 protein is produced by administering to said population of cells a compound that induces
3 the expression or activation of an endogenous ER resident chaperone protein.

1 37. The method of claim 36, wherein said compound is a cytokine.

1 38. A method of identifying a compound that is useful in the treatment
2 or prevention of a thrombotic disease or condition, the method comprising:

3 (1) contacting a cell that expresses an ER resident chaperone protein, or
4 that is capable of expressing an ER resident chaperone protein, with said compound; and
5 (2) detecting the functional effect of said compound on said ER resident
6 chaperone protein;

7 wherein an increase in the expression or activity of said ER resident
8 chaperone protein in said cell indicates that said compound would be useful in the
9 treatment or prevention of said thrombotic disease or condition.

1 39. The method of claim 38, wherein said ER resident chaperone
2 protein is GRP78/BiP.

1 40. The method of claim 38, wherein said ER resident chaperone
2 protein is selected from the group consisting of GRP94, GRP72, Calreticulin, Calnexin,
3 Protein disulfide isomerase, cis/trans-Prolyl isomerase, and HSP47.

1 41. The method of claim 38, wherein said cell is an endothelial cell.

1 42. The method of claim 38, wherein said cell is a smooth muscle cell.

1 43. The method of claim 38, wherein said cell is a macrophage.

1 44. The method of claim 38, wherein said cell is a monocyte.

1 45. The method of claim 38, wherein said compound induces said
2 expression or activation of said ER resident chaperone protein in said cell without
3 inducing ER stress in said cell.

- 1 46. A method of treating or preventing a thrombotic disease in a
2 mammal, the method comprising administering to said mammal a therapeutically or
3 prophylactically effective amount of a compound identified using the method of claim 38.

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